USER'S MANUAL

ICOD
FTP 628A

Shenzhen ICOD Digital Co., Ltd.

DECLARE

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Security Information

In order to use your printer in effectiveness and security, Please obey the following rules.

→Before Use

- **In order to hold the right use method, before using printer, please read this user's manual particularly.**
- **Please put this 《User's Manual》on the convenient position, In order to take out reading and solving problems at any moment.**

→Notes In Security

If neglect the following notice matters, incorrect use may be bring damage.

NOTES

- ◇ **Please don't set this product in the humid or dusty environment.**
- ◇ **No pressing, No dumping.**
- ◇ **Do not impose the electric current and voltage over the biggest absolute fixed value on any pin, If over the normal voltage or the electric current, the equipment will be brought heat damage.**
- ◇ **Make sure that the connection equipment uses the specific cables, Incorrect connection should be brought losing fire or striking fire.**
- ◇ **Any electric material prohibited to fall on the circuit board, the pin on the short circuit board may be bring heat damage because of the over electric current.**

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Chapter Ⅰ Introduction

1.1 Technique Specification

Note: At present FTP 628A only supports FTP-628MCL354 print head, the parameter in the following table measured only on the condition of using this print head.

Item	Parameter
Supporting Print Head	FTP-628MCL354
Printing Mode	Thermal line printing
Printing Speed	50 ㎜/second
Printing Width	57.5±0.5 ㎜
Printing Density	8dot/㎜, 384dot/line
Effective Printing Width	48 ㎜
Paper Solve Method	Auto cut
Detestation of Without Paper	Photo electricity Sensor
Life of Print Head	50KM
Life of Auto cutter	300000

1.2 Printing Character

Item	Parameter
ANK Print font	12×24dot, 1.2(width)×3.00(height)㎜
International Standard Ⅰ、Ⅱ Class Chinese font	24×24dot
	3.00(width) ×3.00(height)㎜

1.3 Interface Form

Item	Parameter
Serial Interface	Support RTS/CTS; Baud rate: 9600bps
	Data-base: 1 start bit +8 data bits +1 bit or more than 1 stop bit

1.4 Control Command

Item	Parameter
Dot Printing Command	Support different density dot and load graphics printing
Character Printing Command	Support ANK character, user defined character and Chinese characters double width printing, double height printing, the gap of the characters are adjustable

1.5 Power and Operating Environment Request

Item	Parameter
Power Supply	DC7.5V～8.5V, 3A
Operating Temp.	0～55
Operating Relative Humidity	10～80%
Storage Temp.	-25～70℃
Storage Relative Humidity	0～90%

1.6 Dimension and Weight (control board)

Item	Parameter
Length	100 ㎜
Width	70 ㎜
Height	13 ㎜
Weight	34g

Chapter Ⅱ Installation and Operation

2.1 General Structure

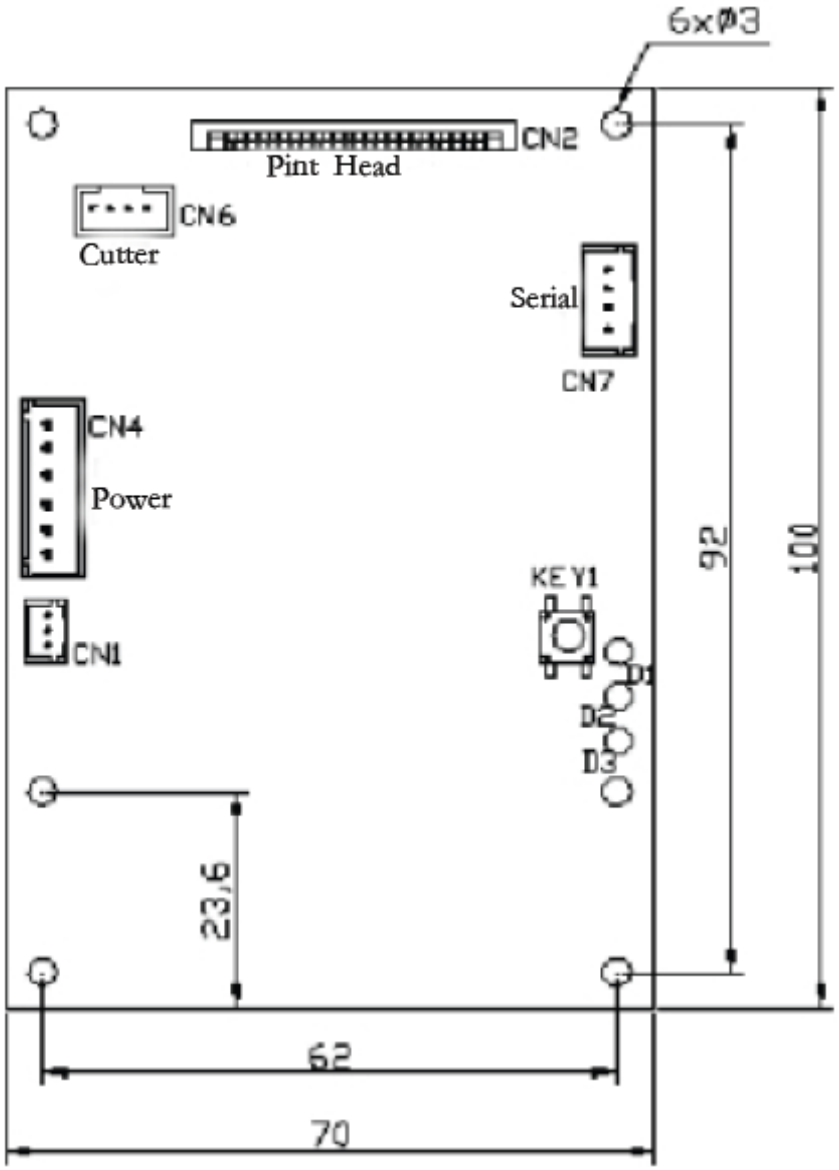


Figure 2.1.1 control board

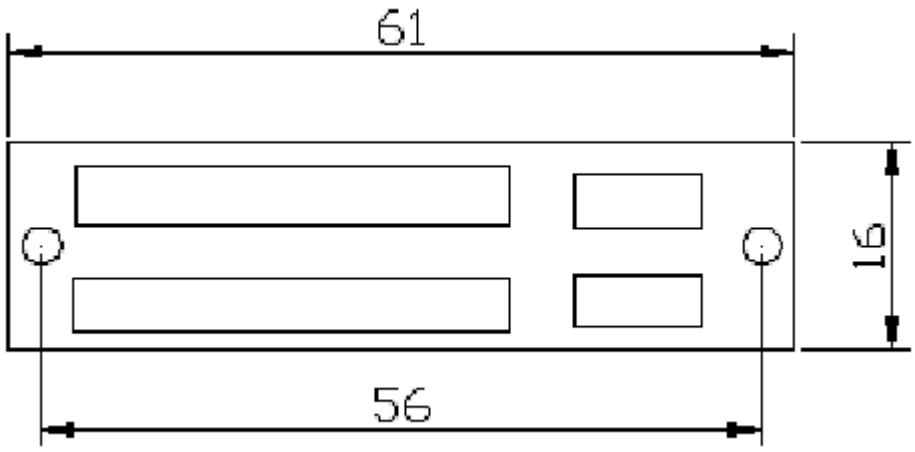
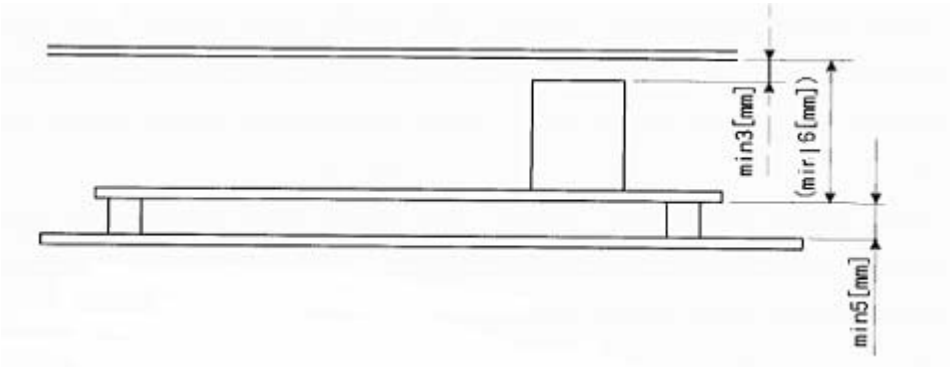


Figure 2.1.2 Connecting board

2.2 PCB Installation Method

In order to install FTB628A control board on the case, the designable case must be met the following requirements.

- Between the above of electrolytic condenser which on the FTB628A1 control board and case, be sure there are 3 ㎜ or more space.
- Be sure the installation pin of FTB628A have 5 ㎜ or more space, the figure as follows:
- Fix the FTB628A control board on the mental case.



2.3 System Installation and Operation

2.3.1 Power connection

Power requirement: DV 7.5V～8.5V 3A

Power Socket: There are installing power connection socket CN4 on the board, connecting as the figure of 2.1.1.

2.3.2 Print head connection

At present only support FTP628A, About the specific connection, please refer to the structural figure. At the process of the actual installation, if the length of the printer head cable is not enough, please use connection board.
The using steps about connecting board

1. Connect control board with connecting board, the socket of connecting board 30 pin is the printer head cable connecting socket, 4 pin socket is the connecting socket of cutter cable.
2. Connect printer head with connecting board well, the method as the above step.

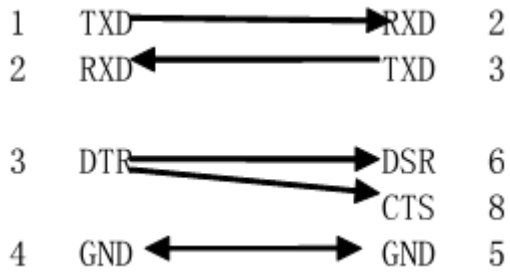
2.4 Interface Connection

2.4.1 RS-232 serial interface

Data transmission: Serial
Synchronization manner: Asynchronous
Handshaking signal: CTS/RTS
Signal level: MARK=-3 to -15V
Baud rate: 9600bps (bps: bits per second)
Date word length: 8 bit fixed
Check-out manner: No
Stop bits: 1 bit or more than 1 bit
Socket (side of the printer): 4Pin socket
The assignments of the interface socket pin as the following table:

Pin	Signal Name	Signal Source	Illustration
1	TXD	Printer	Transmit data
2	RTS	The host computer	Receive data
3	DTR	Printer	Could receive data
4	GND	----------	Logically

Connecting with PC as the following figure:
(Printer)DB4 IBMPC DB9 DB25 IBMPC DB25



The connection figure of printer serial interface and PC serial interface

2.5Key Operation and Light

2.5.1Feed paper button

In the general mode, press the feed paper button, printer moves paper ahead.

In the following circumstances, press feed paper button, it won't move paper ahead.

① Uses ESC c 5 command and prohibits the function of the button.

② Paper-end sensor test without paper.

Note: ESC c 5 can permit/prohibit the function of the button, when pressing button and prohibiting it, the button is ineffective.

2.5.2Light

Without paper, PE light is bright, when occur over temp and incorrect cut paper, ERROR light flashed.

2.6 Special worke mode

2.6.1 Self-test

Self-test can test whether the printer is normal or not, If it can print self-test list correctly, That's to say, all the functions of the printer in normal condition except for the interface of the host computer. Or, it needs to examine and repair.

Start-up self-test:

Installed paper, First press the feed paper button on the off-electric condition, then turn power button on, and loosen feed paper button in 5 seconds, printer entered into self-test mode, and print self-test list.

Chapter Ⅲ Print Table

3.1 Command Illustration

Command	Illustration
LF	Print and change a new line
ESC J n	Print and feed paper n dot lines
ESC 2 n	Set character line spacing 1/6 feet
ESC 3 n	Set line spacing n dot lines(n/203 feet)
ESC ! n	Set character printing method
ESC % n	Permit/prohibit user-defined character
ESC & s n m	Set user-defined character
ESC c 5 n	Permit/prohibit pressing button command
ESC * m n1 n2 d1.....dk	Set dot command
ESC * n1 n2 d1.....dk	Defined load dot
GS / n	Print load dot
GS w n	Set bar code width
GS h n	Set bar code height
① GS k m d1.....dk NUL ② GS k m n d1.....dn	Print bar code
ESC @	Initialization
ESC v	Send printing status to the host computer
ESC v m	Choose the method of cut paper and cut and send paper
DLE EOT n	Transmit real-time status
DLE ENQ n	Send real-time request to printer

3.2 The specific printing command

3.2.1 Printing command

LF

Print and change a new line

Form	ASCⅡ: LF
	DECIMAL: 10
	HEX: 0A
Description	Printing content in the line buffer and move one paper line ahead, when line buffer is empty, only moving one line ahead

ESC J n

Print and feed paper n dot lines

form	ASCII: ESC J n
	DECIMAL: 27 74 n
	HEX: 1B 4A n
Description	Printing content in the line buffer and move n dot lines ahead(n/203feet) n=0～255
	This orders only effected to this line, not change the line spacing which set by ESC 2, ES 3 command

3.2.2 Setting command for line spacing

ESC 2

Set character line spacing 1/6 feet

Form	ASCII: ESC 2
	DECIMAL: 27 50
	HEX: 1B 32
	Set line spacing 1/6 feet

ESC 3 n

Set line spacing n dot lines(n/203 feet)

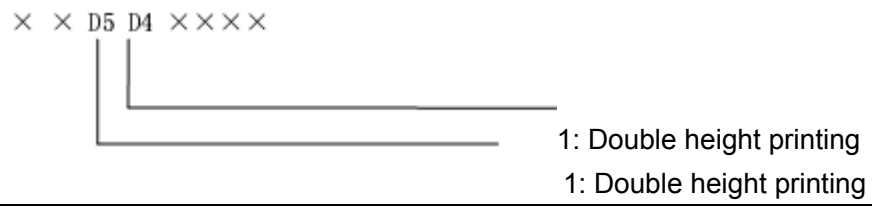
Form	ASCII: ESC 3 n
	DECIMAL: 27 51 n
	HEX: 1B 33 n
Description	Set line spacing n dot lines. n =0～255
	This orders set line spacing n/203 feet. Default value: n=30

3.2.3 Character printing command

ESC ! n

Set character printing pattern

Form	ASCII: ESC ! n
	DECIMAL: 27 33 n
	HEX: 1B 21 n
Description	Set line spacing n dot lines. n =0～255
	ESC ! n is a comprehensive character printing pattern setting orders, be used to choose the size of printing character. The default value of n is 0,

	that's to say, character isn't be extended. The definition of per printing parameter n as follows:
	

ESC % n

Permit/prohibit user-defined character

Form	ASCII: ESC % n
	DECIMAL: 27 37 n
	HEX: 1B 25 n
Description	When n =1, choose user-defined character fond; when n =0, choose interior character fond
	Default value n =0

ESC & s n m

Set user-defined character

Form	ASCII: ESC & S n m （a（p）s×a）m－n＋1
	DECIMAL: 27 38 S n m （a（p）s×a）m－n＋1
	HEX: 1B 26 S n m （a（p）s×a）m－n＋1
Description	ESC & be used to define user-defined character. S=3, 32≤n≤m≤126 0≤a≤12, 0≤p≤255.
	s means the vertical bits, here s=3, n means the started ASCII code of user-defined character
	m means the end ASCII code of user-defined character, when only defining one character, takes n=m, could define at the most of 96 user-defined character
	a means level dot counts; p means user-defined character data, per character s×a bytes, together defined m－n＋1 characters.
	After defining, the user-defined character always effects, till defining again or reposition or turn off print.

3.2.4 Special Control Command

ESC c 5 n

Permit/prohibit pressing button command

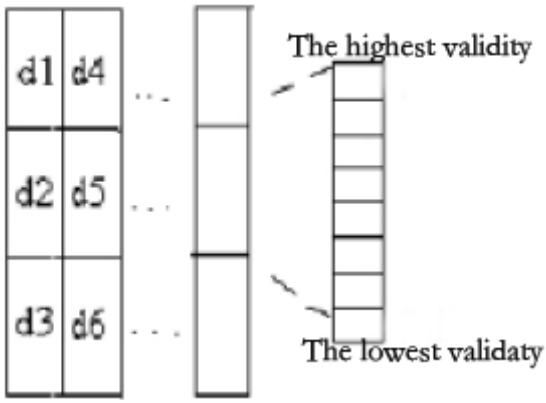
Form	ASCII: ESC c 5 n
	DECIMAL: 27 99 53 n
	HEX: 1B 63 35 n
Description	When n=1, prohibit that the paper carrier button effects
	When n=0, permit that the paper carrier button effects, Default value is n=o

3.2.5 Dot Graphics Printing Command

ESC * m n1 n2 d1.....dk

Set dot command

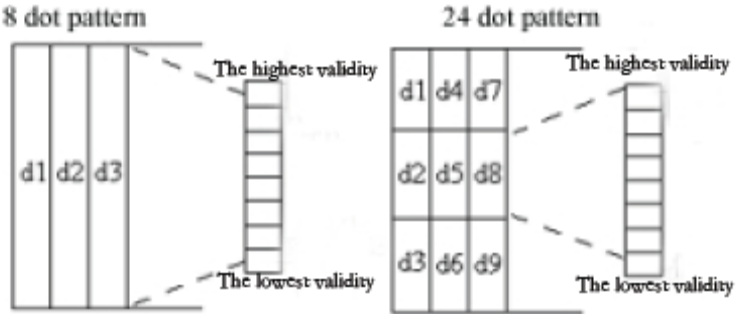
Form	ASCII: ESC * m n n1 n2 〔d〕k
	DECIMAL: 27 42 m n n1 n2 〔d〕k
	HEX: 1B 2A m n n1 n2 〔d〕k
Description	Set dot graphics pattern(takes m), dot counts(takes n1,n2) and dot graphics content (takes 〔d〕k)
	m=0, 1, 32, 33. n1=0～255, n2=0～3. d=0～255
	K=n1+256×n2(m=0,1); k=(n1+6×n2) ×3(m=32,33)
	Level dot counts is n1+256×n2
	If the dot counts over one line, the part which over the biggest dot count will be neglected(connected with the chosen dot graphics pattern, the specifics as the following table)



- ☐ d is dot graphics data byte, relevant dot is 1, which means that this dot should be printed; relevant dot is 0, which means that this dot shouldn't be printed.
- ☐ m be used to choose dot graphics pattern.

M	Mode	Vertical		Horizontal	
		Dot count	Dot density	Dot density	The most of dot counts
0	8 dot single density	8	68 DPI	101 DPI	192
1	8 dot double density	8	68 DPI	203 DPI	384
32	24 dot single density	24	203 DPI	101DPI	192
33	24 dot double density	24	203 DPI	203DPI	384

8 dot pattern 24 dot pattern



Dot graphics data(bit graphic) Dot graphics data(bit graphic)

GS / n

Print load dot

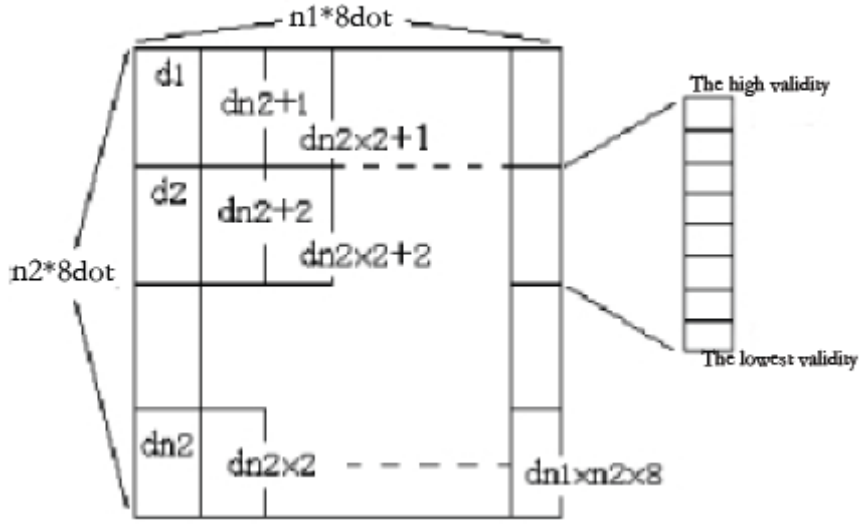
Form	ASCII: GS / n
	DECIMAL: 29 47 n
	DEX: 1D 2F n
Description	This orders be used to print load dot. n=0～3
	n be used to choose dot graphics pattern: could use GS * command to define dot graphics

n	Dot graphics pattern	Veridical density	Horizontal density
0	Normal pattern	203 DPI	203 DPI
1	Double width pattern	203 DPI	101 DPI

	2	Double height pattern	101 DPI	203 DPI
	3	Double height and width pattern	101 DPI	101 DPI

GS * n1 n2 d1.....dk

Defined load dot

Form	ASCII: GS * n1 n2 〔d〕k
	DECIMAL: 29 42 n1 n2 〔d〕k
	HEX: 1D 2A n1 n2 〔d〕k
Description	This orders be used to define load dot
	n 1=1～48, n2=1～255, n1×n2＜1200, k=n1×n2×8
	d is the dot graphics data; horizontal n1×8 dot; vertical n2×8; It always effects after loading dot graphics definition until taking new definition and reposition and recovery
	

3.2.6 Bar code command

GS w n

Set bar code width

Form	ASCII: GS w n
	HEX: 77 n

<table>
<tr><td></td><td>DECIMAL: 29 119 n</td></tr>
<tr><td>Description</td><td>□ Set bar code horizontal size, 2≤n≤3
□ n be set the width of bar code as follows:
<table><tr><td>N</td><td>Bar code</td></tr><tr><td>2</td><td>Normal</td></tr><tr><td>3</td><td>Wide bar code</td></tr></table>
□ Support the below bar code:
CODE 128, CODE 39, ITF
Default value is n =2
Relevant command: GS K</td></tr>
</table>

GS h n

Set bar code height

<table>
<tr><td rowspan="3">Form</td><td>ASCII: GS h n</td></tr>
<tr><td>HEX : 1D 68 n</td></tr>
<tr><td>DECIMAL : 29 104 n</td></tr>
<tr><td>Description</td><td>□ Set bar code height, 1≤n≤255;
□ n be set the vertical dot counts
□ Default value is n=50
□ Relevant command: GS K</td></tr>
</table>

①GS k m d1.....dk NUL

②GS k m n d1.....dn

Print bar code

<table>
<tr><td rowspan="6">Form</td><td>①ASCII code: GS k m d1.....dk NUL</td></tr>
<tr><td>HEX: 1D 6B m d1.....dk 00</td></tr>
<tr><td>DECIMAL: 29 107 m d1.....dk 0</td></tr>
<tr><td>②ASCII code: GS k m n d1.....dn</td></tr>
<tr><td>HEX: 1D 6B m n d1.....dn</td></tr>
<tr><td>DECIMAL: 29 107 m n d1.....dn</td></tr>
<tr><td>Description</td><td>□ Choose bar code system and print bar code:
① 4≤m≤5 (k and d decided by using bar code system)
② m=73 (n and d decided by using bar code system)
□ m set the bar code system as follows:
<table><tr><td>M</td><td>Bar code system</td><td>Character units</td><td>Notes</td></tr></table></td></tr>
</table>

①	4	CODE39	1≤K	48≤d≤57, 65≤d≤90,32,36,37,43,45, 46,47
	5	ITF	1≤K(k is even)	48≤d≤57
②	73	CODE128	1≤n≤255	0≤d≤127

【Note①】

·This orders finished by NUL code.

·The units of ITF bar code data must be even. When inputting odd units data, the printer will be neglected the last one which received.

【Note②】

·n designates bar code data byte counts, and the printer will take n byte date and deal with as the bar code data from the next character.

·If n exceeds the designated scale, then the printer stop dealing with this orders, and treat continued data as the general data.

·This orders feed paper according to the requirement of printing bar code, no consider the line spacing which set by ESC 2 or ESC 3.

·This orders only effects that there are no data in the printing line buffer area. When there are data in the printing line buffer area, the printer will treat continued data as the general data.

·After printing bar code, this orders set the printing position at the beginning of a line.

·This orders no effected by printing pattern(the size of character and so on), except reverse printing pattern.

When using CODE128(m=73):

·About the information of CODE128 bar code and code table, please consult appendix Ⅰ.

·When this printer uses CODE128, please consider the below factors which refers to sending the data:

① The head of bar code data must be the chosen character(CODE A,CODE B, or CODE C) of code fond, be used to choose the first used code fond.

② Defined special characters by used "｛" and a group of characters, Through sending two "｛" definition continually and defined ASCII character "｛".

Special character	Sending data		
	ASCII code	HEX	DECIMAL
SHIFT	｛ S	7B, 53	123, 83
CODE A	｛ A	7B, 41	123, 65
CODE B	｛ B	7B, 42	123, 66
CODE C	｛ C	7B, 43	123, 67
FNC 1	｛1	7B, 31	123, 49
FNC 2	｛2	7B, 32	123, 50

	FNC 3	{3	7B, 33	123, 51
	FNC 4	{4	7B, 34	123, 52
	“{”	{ {	7B, 7B,	123, 123

·If the data serial head of bar code is not the code fond chosen character, so the printer stop dealing with command, and treat the continued data as the general data.

·If the combination of “{” and continued characters isn’t fitting for any special characters, so the printer stop dealing with command, and treat the continued data as the general data.

·If the printer can’t receive the characters which should be used to special code fond, so the printer stop dealing with command, and treat the continued data as the general data.

3.2.7 Other commands

ESC @

Initialization

Form	ASCII: ESC @
	DECIMAL: 27 64
	HEX: 1B 40
Description	ESC @ command initializes the following contents: □ Clear away printing buffer; □ Restore default value; □ Choose character printing pattern; □ Delete user-defined character.

ESC v

Send printing condition to the host computer

Form	ASCII: ESC v
	DECIMAL: 27 118
	HEX: 1B 76
Description	Send printing condition to the host computer, only effects serial communication.
	When the printer received this orders, sending one byte up to printer through serial interface TXD.
	The definition of per byte as follows:

Bit	Function	Data	
		0	1

	0	Undefined	----------	----------
	1	Undefined	----------	----------
	2	Paper-test machine	With paper	Without paper
	3	Undefined	----------	----------
	4	Unused	Identical data is 0	Identical data is 0
	5	Undefined	----------	---------
	6	Undefined	----------	---------
	7	Undefined	----------	---------

①GS V m

②GS V m n

Choose the pattern of cut paper and cut and send paper

Form	ASCII: GS V m DECIMAL: 29 86 m HEX: 1D 56 m
	ASCII: GS V m n DECIMAL: 29 86 m n HEX: 1D 56 m n
Description	0≤n≤255 This orders supports two cutting pattern When m=0,1,48,49, printer executes direct cutting paper pattern.(Full cutter or half cutter) When m=66, printer firstly moves the paper ahead(The position of cut/slice paper ＋ n×0.176 ㎜), then cutting paper. ·Execute full cut paper or half cut paper which determined by DIP set. ·This orders only effects when the printing position set at the beginning of the line. ·When chosen black mark is effective, It's ineffective when execution GS v 66 command, the space of feeding paper ahead which determined by the parameter of GS (F command.

DLE EOT n

Transmit real-time status

Form	ASCⅡ: DLE EOT n
	DECIMAL: 16 4 n
	HEX: 10 04 n

Description

This orders only supports the D5000 serial interface model, after receiving this order, according to the requirement of parameter n, send a relevant byte printer condition to the host computer at once.

n took the scale of number 1～4, the relevant printer condition for different n number is:

n=1: Printer condition byte

n=2: Printer off-line condition byte

n=3: Printer breakdown condition byte

n=4: Printer paper test condition byte

- When printer send condition byte back, not consider the host computer allow sending date or not, That's to say, not test interface DSR/CTS signal, send at once when receiving the DLE EOT n order.
- When printer send condition byte back, not consider printer line is off-line or not, receiving buffer is full or not, or whether happen any one of fault.
- The specified definition of the relevant condition byte for different n number as the next tables.

n=1: Printer condition

Bit	Function	Datum OFF/ON	
		0	1
0	Unused	0	---
1	Unused	---	1
2	Undefined	---	---
3	Off-line/On-line	On-line	Off-line
4	Unused	---	1
5	Whether waiting on-line restored or not	Not waiting on-line restored	Waiting on-line restored
6	Undefined	---	---
7	Unused	0	---

n=2: Off-line condition

Bit	Function	Datum OFF/ON	
		0	1
0	Unused	0	---
1	Unused	---	1
2	Undefined	---	---
3	Press key and feed paper	No feed paper	The processing of pressing key

			and feeding paper
4	Unused	---	1
5	Out of paper stop printing	With paper	Without paper stop printing
6	In breakdown condition	In good condition	Breakdown occurred
7	Unused	0	---

n=3: Breakdown condition

Bit	Function	Datum OFF/ON	
		0	1
0	Unused	0	---
1	Unused	---	1
2	Machine breakdown	In good condition	Machine breakdown occurred
3	Cutter breakdown	In good condition	Cutter breakdown occurred
4	Unused	---	1
5	The breakdown can't be restored	Any breakdown can be restored	The breakdown can't be restored which have occurred
6	The breakdown can be restored by itself	Any breakdown can be restored by itself	The breakdown can be restored by itself which have occurred
7	Unused	0	---

n=4: Paper test condition

Bit	Function	Datum OFF/ON	
		0	1
0	Unused	0	---
1	Unused	---	1
2 . 3	Paper will exhaust and switch in test condition	With paper	Without paper
4	Unused	---	1
5 . 6	Out of paper and switch in test condition	With paper	Without paper

	7	Unused	0	---	

DLE ENQ n

Send real-time request to printer

Form	ASCⅡ: DLE ENQ n
	DECIMAL: 16 5 n
	HEX: 10 05 n
Description	This order only effects to the D5000 serial model, when receiving this order, according to n parameter stipulation and answer the host computer's operational request. Parameter n took number 0, 2 n=0: Restore on-line condition n=2: Clear received buffer area and printing buffer area, then restart. ● Receiving this order, answer and execute. ● Only at the process of "wait on-line condition" which set paper by itself. This command (n=0) will be executed, the other condition doesn't answer this order(n=0). ● Only happened cutter fault, black mark fault, this order (n=2) will be executed, the other condition doesn't answer this order(n=2).

Appendix Ⅰ: CODE128 bar code

1. The description of CODE128 bar code

At the CODE128 bar code system, using one bar code character fond, it could indicate 128 units ASCII characters and 2 bit counts.

These bar code characters defined by 103 units bar code characters and 3 units code fond , Per code fond indicates the following characters:

·Code fond A: ASCII character 00H to 5FH

·Code fond B: ASCII character 20H to 7FH

·Code fond C: Use one character indicates 2 bits natural characters(100 units numerals from 00 to 99)

There are another special characters among CODE128:

·SHIFT character

At the code fond A, the code which followed with SHIFT be treated as the code B character. At the code fond B, the code which followed with SHIFT be treated as the code A character. SHIFT character can't be used at code fond C.

·Code fond chosen character(CODE A, CODE B, CODE C)

This character changes the following code fond to code fond A B or C

·Function character(FNC1, FNC2,FNC3,FNC4)

The use of function character depends on the application software. At the code fond C, only FNC 1 in practical.

Code table

Printing character among code fond A

CR	0D	13	5	35	53	]	5D	93
SO	0E	14	6	36	54	^	5E	94
SI	0F	15	7	37	55	_	5F	95
DLE	10	16	8	38	56	FNC1	7B, 31	123, 49
DC1	11	17	9	39	57	FNC2	7B, 32	123, 50
DC2	12	18	:	3A	58	FNC3	7B, 33	123, 51
DC3	13	19	;	3B	59	FNC4	7B, 34	123, 52
DC4	14	20	<	3C	60	SHIFT	7B, 53	123, 83
NAK	15	21	=	3D	61	CODEB	7B, 42	123, 66
SYN	16	22	>	3E	62	CODEC	7B, 43	123, 67
ETB	17	23	?	3F	63			
CAN	18	24	@	40	64			
EM	19	25	A	41	65			
SUB	1A	26	B	42	66			
ESC	1B	27	C	43	67			
FS	1C	28	D	44	68			
GS	1D	29	E	45	69			
RS	1E	30	F	46	70			
US	1F	31	G	47	71			
SP	20	32	H	48	72			
!	21	33	I	49	73			
"	22	34	J	4A	74			
#	23	35	K	4B	75			
$	24	36	L	4C	76			
%	25	37	M	4D	77			
&	26	38	N	4E	78			
'	27	39	O	4F	79			

Printing character among code fond B

Character	Transmit Data		Character	Transmit Data		Character	Transmit Data	
	Hex	Decimal		Hex	Decimal		Hex	Decimal
SP	20	32	H	48	72	p	70	112
!	21	33	I	49	73	q	71	113
"	22	34	J	4A	74	r	72	114
#	23	35	K	4B	75	s	73	115
$	24	36	L	4C	76	t	74	116
%	25	37	M	4D	77	u	75	117
&	26	38	N	4E	78	v	76	118
'	27	39	O	4F	79	w	77	119
(	28	40	P	50	80	x	78	120
)	29	41	Q	51	81	y	79	121
*	2A	42	R	52	82	z	7A	122
+	2B	43	S	53	83	{	7B,7B	123,123
,	2C	44	T	54	84	|	7C	124
_	2D	45	U	55	85	}	7D	125
.	2E	46	V	56	86	—	7E	126
/	2F	47	W	57	87	DEL	7F	127
0	30	48	X	58	88	FNC1	7B,31	123,49
1	31	49	Y	59	89	FNC2	7B,32	123,50
2	32	50	Z	5A	90	FNC3	7B,33	123,51
3	33	51	[	5B	91	FNC4	7B,34	123,52
4	34	52	\	5C	92	SHIFT	7B,53	123,83
5	35	53	]	5D	93	CODE A	7B,41	123,66
6	36	54	^	5E	94	CODE C	7B,43	123,67
7	37	55	_	5F	95			
8	38	56	`	60	96			
9	39	57	a	61	97			
:	3A	58	b	62	98			
;	3B	59	c	63	99			
<	3C	60	d	64	100			
=	3D	61	e	65	101			
>	3E	62	f	66	102			
?	3F	63	g	67	103			
@	40	64	h	68	104			
A	41	65	i	69	105			
B	42	66	j	6A	106			
C	43	67	k	6B	107			
D	44	68	l	6C	108			
E	45	69	m	6D	109			
F	46	70	n	6E	110			
G	47	71	o	6F	111			

Printing character among code fond C

	Transmit Data			Transmit Data			Transmit Data	
Character	Hex	Decimal	Character	Hex	Decimal	Character	Hex	Decimal
00	00	0	40	28	40	80	50	80
01	01	1	41	29	41	81	51	81
02	02	2	42	2A	42	82	52	82
03	03	3	43	2B	43	83	53	83
04	04	4	44	2C	44	84	54	84
05	05	5	45	2D	45	85	55	85
06	06	6	46	2E	46	86	56	86
07	07	7	47	2F	47	87	57	87
08	08	8	48	30	48	88	58	88
09	09	9	49	31	49	89	59	89
10	0A	10	50	32	50	90	5A	90
11	0B	11	51	33	51	91	5B	91
12	0C	12	52	34	52	92	5C	92
13	0D	13	53	35	53	93	5D	93
14	0E	14	54	36	54	94	5E	94
15	0F	15	55	37	55	95	5F	95
16	10	16	56	38	56	96	60	96
17	11	17	57	39	57	97	61	97
18	12	18	58	3A	58	98	62	98
19	13	19	59	3B	59	99	63	99
20	14	20	60	3C	60	FNC1	7B,31	123,49
21	15	21	61	3D	61	CODE A	7B,41	123,65
22	16	22	62	3E	62	CODE B	7B,42	123,66
23	17	23	63	3F	63			
24	18	24	64	40	64			
25	19	25	65	41	65			
26	1A	26	66	42	66			
27	1B	27	67	43	67			
28	1C	28	68	44	68			
29	1D	29	69	45	69			
30	1E	30	70	46	70			
31	1F	31	71	47	71			
32	20	32	72	48	72			
33	21	33	73	49	73			
34	22	34	74	4A	74			
35	23	35	75	4B	75			
36	24	36	76	4C	76			
37	25	37	77	4D	77			
38	26	38	78	4E	78			
39	27	39	79	4F	79			